

CLAIMS

1. A time series data dimensional compression apparatus, comprising:

(1) a time series data generating section that generates a plurality
5 of pieces of time series data of a specified length by sliding a start point of
time series data at a predetermined interval along a time axis on time
series source data that is sequential data measured at a regular interval
along the time axis;

(2) a time series subsequence generating section that generates
10 time series subsequences of a specified segment width by which each of the
plurality of pieces of time series data is divided;

(3) a singular value decomposition processing section that performs
singular value decomposition on all of the divided time series subsequences;
and

15 (4) a dimensional compression time series data generating section
that generates dimensional compression time series data by using a
specified number of high-order elements of the singular value
decomposition as a representative value of each of the divided time series
subsequences of the specified segment width.

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2. The time series data dimensional compression apparatus of claim 1,
wherein a dimension of the time series data of the specified length is
compressed by combining representative values.

25 3. The time series data dimensional compression apparatus of claim 1,

further comprising:

a data analyzing section that analyzes the time series data, and determines the segment width by which the time series data is divided, and an element from the singular value decomposition up to which the singular value decomposition is used as the representative value of a time series subsequence.

4. A time series data dimensional compression apparatus, comprising:

(1) a time series data generating section that generates a plurality of pieces of time series data of a specified length by sliding a start point of time series data at a predetermined interval along a time axis on time series source data that is sequential data measured at a regular interval along the time axis;

(2) an intermediate dimension determining section that determines a segment width to take a mean for each of the plurality of pieces of time series data of the specified length;

(3) a mean value calculating section that calculates a mean value of the time series for the segment width to take the mean;

(4) an intermediate time series generating section that generates an intermediate time series by using the mean value calculated as a segment representative value;

(5) a singular value decomposition processing section that performs the singular value decomposition on each intermediate time series; and

(6) a dimensional compression time series data generating section that uses a specified number of high-order elements of the singular value

decomposition as compressed data of the intermediate time series.